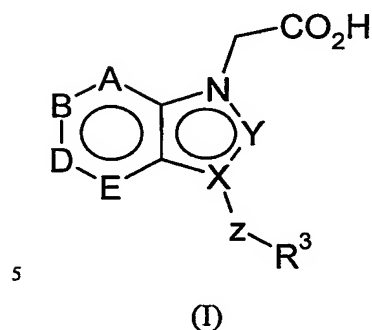


Claims

1. A compound of formula (I) or a pharmaceutically acceptable salt thereof:



in which

- 10 each of A,B,D and E is independently C-R¹ or N;

Y = C-R², N or C=O;

Z is oxygen, sulphur, a C₁₋₆alkylene chain or a bond;

15

R¹ is independently selected from hydrogen, halogen, CN, nitro, S(O)_xR⁶, OR⁶, SO₂NR⁴R⁵, CONR⁴R⁵, NR⁴R⁵, NR⁷SO₂R⁷, NR⁷C(O)_xR⁷, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁₋₆alkyl, aryl or heteroaryl, the latter five groups being optionally substituted by one or more substituents independently selected from 1-3 halogen atoms, -OR⁷ and -NR⁴R⁵, S(O)_xR⁸, C(O)NR⁴R⁵,

- 20 where x is 0,1 or 2;

R² is C₁₋₆alkyl which may be optionally substituted by one or more substituents independently selected from halogen atoms, aryl, -OR⁹ and -NR¹⁰R¹¹;

- 25 R³ is an aryl or heteroaryl group each of which is optionally substituted by one or more substituents independently selected from halogen, CN, nitro, S(O)_xR⁶, OR⁷, SO₂NR⁴R⁵, CONR⁴R⁵, NR⁴R⁵, NR⁷SO₂R³, NR⁷C(O)_xR⁶, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁₋₆ alkyl, the

latter three groups being optionally substituted by one or more substituents independently selected from halogen atoms, $-OR^6$ and $-NR^4R^5$, where $x=0,1$ or 2 ;

R^4 and R^5 independently represent a hydrogen atom, a C_{1-6} alkyl group, or aryl group the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, aryl, $-OR^{12}$ and $-NR^{13}R^{14}$, $-CONR^{13}R^{14}$, $-NR^{13}COR^{14}$, $-SO_2NR^{13}R^{14}$, $NR^{13}SO_2R^{14}$;

or

R^4 and R^5 together with the nitrogen atom to which they are attached can form a 3-8 membered saturated heterocyclic ring optionally containing one or more atoms selected from O, S, NR^{15} , and itself optionally substituted by C_{1-3} alkyl, halogen;

R^6 represents a C_{1-6} alkyl which may be optionally substituted by one or more substituents independently selected from halogen atoms, aryl, $-OR^9$ and $-NR^{10}R^{11}$.

each of R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , independently represents a hydrogen atom, C_1-C_6 , alkyl, an aryl or a heteroaryl group which may be optionally substituted by one or more halogen atoms, OH, O- C_1-C_6 alkyl; and

R^{15} is hydrogen, C_{1-4} alkyl, $-COC_1-C_4$ alkyl, $-COQC_1-C_4$ alkyl, $Q=O$ or NR^6 , provided that:

the number of nitrogen atoms within the ring ABDE is 1 or 2 when Y is CR^2 and R^3 cannot be phenyl when Y is $C=O$ and X is nitrogen.

2. A compound according to claim 1 in which A, B, D and E are all $C-R^1$.

3. A compound according to claim 1 in which one of A, D or E is N and D and the others are $C-R^1$ where R^1 is hydrogen, phenyl, CF_3 , CN, alkyl or halogen.

4. A compound according to any one of claims 1 to 3 in which Y is $C=O$ and X is N.

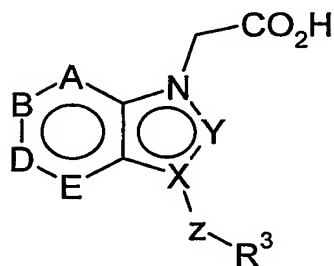
5. A compound according to claim 4 in which Z is a bond.

6. A compound according to any one of claims 1 to 3 in which Y is nitrogen or C-R² where R² is methyl.
- 5 7. A compound according to claim 6 in which X is carbon,
8. A compound according to claim 6 or 7 in which Z is sulfur, methylene or a bond.
9. A compound according to claim 1 selected from:
- 10 5-methyl-3-(4-quinolinyl)-1*H*-indazole-1-acetic acid;
5-cyano-3-(4-quinolinyl)-1*H*-indazole-1-acetic acid;
3-(6-fluoro-4-quinolinyl)-4-(trifluoromethyl)-1*H*-indazole-1-acetic acid;
4-iodo-3-(4-quinolinyl)-1*H*-indazole-1-acetic acid;
3-[(4-chlorophenyl)thio]-5-iodo-1*H*-indazole-1-acetic acid;
15 3-(7-chloro-4-quinolinyl)-2-methyl-1*H*-pyrrolo[2,3-*b*]pyridine-1-acetic acid, sodium salt;
3-[(4-Chloro-2,4-cyclohexadien-1-yl)thio]-2,5-dimethyl-1*H*-pyrrolo[3,2-*b*]pyridine-1-acetic acid;
2,5-Dimethyl-3-[[4-(methylsulfonyl)-2,4-cyclohexadien-1-yl]methyl]-1*H*-pyrrolo[3,2-*b*]pyridine-1-acetic acid;
20 2,5-Dimethyl-3-[[4-(methylsulfonyl)phenyl]thio]- 1*H*-pyrrolo[3,2-*b*]pyridine-1-acetic acid;
4-Chloro-3-[(4-chlorophenyl)thio]-2-methyl-1*H*-pyrrolo[3,2-*c*]pyridine-1-acetic acid;
4-Chloro-2-methyl-3-[[4-(methylsulfonyl)phenyl]thio]- 1*H*-pyrrolo[3,2-*c*]pyridine-1-acetic acid;
3-[(4-Chlorophenyl)thio]-2-methyl-4-phenyl-1*H*-pyrrolo[3,2-*c*]pyridine-1-acetic acid;
25 2-Methyl-3-[[4-(methylsulfonyl)phenyl]thio]-4-phenyl-1*H*-pyrrolo[3,2-*c*] pyridine-1-acetic acid;
and pharmaceutically acceptable salts thereof.
10. A compound of formula (I) according to any one of claims 1 to 9 for use in therapy.

11. A method of treating a disease mediated by prostaglandin D2, which comprises administering to a patient a therapeutically effective amount of a compound of formula (I), or a pharmaceutically acceptable salt as defined in claims 1 to 9.

5 12. A method of treating according to claim 11 wherein the disease is asthma or rhinitis.

13. Use of a compound of formula (I) or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for the treatment of a disease mediated by prostaglandin D2:



(I)

in which

15 each of A,B,D and E is independently C-R¹ or N;

Y = C-R², N or C=O;

Z is oxygen, sulphur, a C₁₋₆alkylene chain or a bond;

20

R¹ is independently selected from hydrogen, halogen, CN, nitro, S(O)_xR⁶, OR⁶, SO₂NR⁴R⁵, CONR⁴R⁵, NR⁴R⁵, NR⁷SO₂R⁷, NR⁷C(O)_xR⁷, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁₋₆alkyl, aryl or heteoroaryl, the latter five groups being optionally substituted by one or more substituents independently selected from 1-3 halogen atoms, -OR⁷ and -NR⁴R⁵, S(O)_xR⁸, C(O)NR⁴R⁵,

25 where x is 0,1 or 2;

R^2 is C_{1-6} alkyl which may be optionally substituted by one or more substituents independently selected from halogen atoms, aryl, $-OR^9$ and $-NR^{10}R^{11}$;

R^3 is an aryl or heteroaryl group each of which is optionally substituted by one or more substituents independently selected from halogen, CN, nitro, $S(O)_xR^6$, OR^7 , $SO_2NR^4R^5$, $CONR^4R^5$, NR^4R^5 , $NR^7SO_2R^3$, $NR^7C(O)_xR^6$, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_{1-6} alkyl, the latter three groups being optionally substituted by one or more substituents independently selected from halogen atoms, $-OR^6$ and $-NR^4R^5$, where $x=0,1$ or 2 ;

R^4 and R^5 independently represent a hydrogen atom, a C_{1-6} alkyl group, or aryl group the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, aryl, $-OR^{12}$ and $-NR^{13}R^{14}$, $-CONR^{13}R^{14}$, $-NR^{13}COR^{14}$, $-SO_2NR^{13}R^{14}$, $NR^{13}SO_2R^{14}$;

or

R^4 and R^5 together with the nitrogen atom to which they are attached can form a 3-8 membered saturated heterocyclic ring optionally containing one or more atoms selected from O, S, NR^{15} , and itself optionally substituted by C_{1-3} alkyl, halogen;

R^6 represents a C_{1-6} alkyl which may be optionally substituted by one or more substituents independently selected from halogen atoms, aryl, $-OR^9$ and $-NR^{10}R^{11}$.

each of R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , independently represents a hydrogen atom, C_{1-6} alkyl, an aryl or a heteroaryl group which may be optionally substituted by one or more halogen atoms, OH, $O-C_{1-6}$ alkyl; and

R^{15} is hydrogen, C_{1-4} alkyl, $-COC_{1-4}$ alkyl, $-COQC_{1-4}$ alkyl, $Q=O$ or NR^6 , provided that:

the number of nitrogen atoms within the ring ABDE is 1 or 2 when Y is CR^2 and R^3 cannot be phenyl when Y is $C=O$ and X is nitrogen.

14. Use according to claim 13 wherein the disease is asthma or rhinitis.

15. Use according to claim 13 or 14 wherein the compound is selected from:

5-methyl-3-(4-quinolinyl)-1*H*-indazole-1-acetic acid;

5-cyano-3-(4-quinolinyl)-1*H*-indazole-1-acetic acid;

3-(6-fluoro-4-quinolinyl)-4-(trifluoromethyl)-1*H*-indazole-1-acetic acid;

5 4-iodo-3-(4-quinolinyl)-1*H*-indazole-1-acetic acid;

3-[(4-chlorophenyl)thio]-5-iodo-1*H*-indazole-1-acetic acid;

3-(7-chloro-4-quinolinyl)-2-methyl-1*H*-pyrrolo[2,3-*b*]pyridine-1-acetic acid, sodium salt;

3-[(4-Chloro-2,4-cyclohexadien-1-yl)thio]-2,5-dimethyl-1*H*-pyrrolo[3,2-*b*]pyridine-1-acetic acid;

10 2,5-Dimethyl-3-[[4-(methylsulfonyl)-2,4-cyclohexadien-1-yl]methyl]-1*H*-pyrrolo[3,2-*b*]pyridine-1-acetic acid;

2,5-Dimethyl-3-[[4-(methylsulfonyl)phenyl]thio]-1*H*-pyrrolo[3,2-*b*]pyridine-1-acetic acid;

4-Chloro-3-[(4-chlorophenyl)thio]-2-methyl-1*H*-pyrrolo[3,2-*c*]pyridine-1-acetic acid;

4-Chloro-2-methyl-3-[[4-(methylsulfonyl)phenyl]thio]-1*H*-pyrrolo[3,2-*c*]pyridine-1-acetic

15 acid;

3-[(4-Chlorophenyl)thio]-2-methyl-4-phenyl-1*H*-pyrrolo[3,2-*c*]pyridine-1-acetic acid;

2-Methyl-3-[[4-(methylsulfonyl)phenyl]thio]-4-phenyl-1*H*-pyrrolo[3,2-*c*]pyridine-1-acetic acid;

and pharmaceutically acceptable salts thereof.